

REMARKS

Claims 14-16 and 24-31 are pending in the application. Claims 1-13 and 17-23 were previously canceled. Claims 24-31 were previously added. Claim 32 is newly added.

Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,953,729 to Cabrera et al., hereinafter "Cabrera", in view of U.S. Patent No. 6,592,629 to Cullen et al., hereinafter "Cullen", and further in view of U.S. Patent No. 5,870,756 to Nakata et al., hereinafter "Nakata". Claim 14 is independent. Applicants respectfully traverse this rejection.

Claim 14 provides a gateway appliance for sending data to and receiving data from a remote data storage location accessible over a communications link. The gateway appliance includes a data processor, a first communications port for communicating with a plurality of computers in a computer network, a second communications port for communicating with a remote data storage facility, and a non-volatile data storage device for storing locally, data to be communicated via the second communications port. The gateway appliance emulates a file system corresponding to a file system of a network of computer entities, and converts data between a file system dependent format and a file system independent format.

Cabrera discloses archiving or backing up data using staging mechanisms which minimize the amount of storage space required for staging data by using sparse file technology to stage data prior to transfer to a remote storage medium (col. 2., lines 55-64). Staging areas are provided that can expand and contract according to the staging storage needs (col. 3, lines 21-23). In one embodiment, data producer 60, storing data in data file 64, creates data to be backed up or archived to a backup or archive storage device, such as remote storage 62 (col. 6, lines 58-66). Archive system 66 moves data from data file 64 to a staging storage area which is adapted for temporarily storing the data (col. 7, lines 3-7). In one embodiment, means are provided for storing sparse data,

such as sparse file 76 to store data comprising a mixture of non-zero data and zero data in a storage space substantially equally to the storage space required to store only the non-zero data (col. 7, lines 42-46). Archive system 66 then transfers all or part of the data in sparse file 76 to remote storage 62 (col. 7, lines 47-49). The Office Action admits that Cabrera does not disclose converting data between a file system dependent format and a file system independent format.

Cabrera simply discloses a system for backing up or archiving data. Cabrera does not disclose a gateway appliance that **emulates a file system** of a network of computer entities. The Office Action refers to Figure 2 of Cabrera, which discloses remote storage 62 and "data producer" 60, as corresponding to the feature of the gateway appliance emulating a file system corresponding to a file system of a network of computer entities. However, there is no mention in Cabrera that the storage device 62, archive system 66, or any other component in the system, is capable of emulating a different file system used by another computer connected over the network. Transfer of data from data producer component 60 to archive system 66, and then to remote storage 62, are all performed using conventional data transfer network components (see column 6, lines 16 - 36 and column 7, line 3 - column 8, line 11). There is thus no disclosure or suggestion of emulating a file system corresponding to a file system of a network of computer entities, as is recited in claim 14.

Nakata discloses an interchangeable storage medium used in data input/output of a computer system, which has recorded thereon (1) a data file, (2) a program to allow the data file to be utilized by a computer system, (3) data control information, and (4) program control information (col. 2, lines 17-29). Also included is information specifying an operating system in which the program is capable of being used (col. 2, lines 30-35). When a data file is written, a processor writes a processing program to allow the computer system to subsequently utilize a data file to be written to the interchangeable storage medium in a form correlated with the data file (col. 4, lines 33-37). When a data file is to be read in, the processor subjects the data file to processing, such as conversion processing, by the program corresponding to the data file in order that the

data file can be utilized by the computer system (col. 4, lines 38-42). For example, when a data file has been written to the interchangeable storage medium upon being compressed and is then to be read in from the interchangeable storage medium, the processor uses the program corresponding to this data file to restore, i.e., decompress, the data file and to convert the data to a data format capable of being processed by the computer system (col. 4, lines 43-50).

In another example, a data file is stored on the interchangeable storage medium in a data format that is not dependent upon the operating system, and processing programs for making this data file utilizable by various computer systems are stored on the interchangeable storage medium (col. 4, line 63 – col. 5, line 1). When a computer system equipped with the prescribed operating system reads in a data file, the data file is converted to an executable data format using the program corresponding to this data file to be read, namely the program conforming to the operating system of the computer system (col. 5, lines 1-6).

Nakata discloses a storage medium such as an optical disk, that is intended to allow data files to be read by computers having different operating systems. Nakata does not disclose a gateway appliance that “emulates a file system corresponding to a file system of a network of computer entities,” As recited in claim 14.

Also, contrary to the Office Action’s assertion, Nakata does not disclose a device that “converts data between a file system dependent format and a file system independent format,” as recited in claim 14. Nakata discloses storing various driver programs on the storage medium along with the data files. A driver program appropriate for the operating system of the desired computer is selected, which either converts the data file into an executable file to allow it to be read by the computer, or converts the data format of the file into one appropriate for the operating system of the computer (see column 9, lines 48 - 60, or column 10, lines 28 - 38,).

Therefore, the conversions performed in Nakata are not dependent on the type of

file system, but rather on the type of **operating system (OS)** of the computer trying to read the file. This involves producing/supplying machine instructions to enable computers running different types of OS to open the files. Nakata does not disclose converting data to conform to different file systems, which is an attribute completely unrelated to the ability to run on different operating systems.

Furthermore, there is no motivation to combine the teachings of Cabrera and Nakata. Nakata, which is concerned with converting data files to be run on various operating systems, addresses a different problem than that addressed by the present invention provided by claim 14, which is concerned with providing a system that can emulate different file systems for storage purposes. Typically, regarding the present invention, the data stored will normally be re-accessed by the same computer(s) from which it originated and thus no such conversion between OS is required. Therefore, there would be no need or motivation to convert the data format of a file or convert a data file into an executable file in order to be opened in different operating systems.

Cabrera discloses a system for archiving or backing up data to a remote storage medium. In contrast, the teaching of Nakata is directed to creating an interchangeable storage medium that allow files to be used in computers having different types of operating systems. Thus, the rationale behind Nakata is to create a self-contained storage medium, e.g., a floppy disk, that makes a data file stored on the disk available to a particular computer (which may or may not be connected to a network). Therefore, attempting to make this functionality available outside the computer and separate from the storage medium, such as at a remote storage medium of Cabrera, or a networked gateway appliance as suggested by the Examiner, is contrary to the teaching of Nakata. Thus, there would be no motivation to combine the teachings of Cabrera, which is concerned with remote data storage, with the teachings of Nakata, which is concerned with executing data files.

Therefore, Nakata does not disclose or suggest a gateway appliance that "emulates a file system corresponding to a file system of a network of computer

entities,” or that “converts data between a file system dependent format and a file system independent format,” as recited in claim 14. Furthermore, there is no motivation to combine the teachings of Cabrera and Nakata.

Cullen discloses a document image storage system including a control mechanism that automatically archives a document image in response to a document being produced by a peripheral device (col. 2, lines 55-58). Also disclosed is an embodiment of a multifunction machine includes a control module for retrieving data that is addressed to the multifunction machine (col. 4, lines 64-67). The multifunction machine also includes a mass storage medium coupled to the control module for storing document image data (col. 5, lines 8-10). The multifunction machine may also include a compression/decompression module coupled to mass storage medium, for compressing or decompressing document image data (col. 5, lines 16-32).

Although Cullen discloses a data compression/decompression module, it does not disclose or suggest a gateway appliance configured to emulate a file system, or convert data between file system independent/dependent formats. Therefore, Cullen does not disclose or suggest a gateway appliance that “emulates a file system corresponding to a file system of a network of computer entities,” or that “converts data between a file system dependent format and a file system independent format,” as recited in claim 14.

Neither Cabrera, Cullen, nor Nakata disclose or suggest a gateway appliance that “emulates a file system corresponding to a file system of a network of computer entities,” or that “converts data between a file system dependent format and a file system independent format,” as recited in claim 14. Thus, Cabrera, Cullen and Nakata, whether considered alone or in combination, fail to disclose or suggest the elements of claim 14. Therefore, claim 14 is patentable over the cited combination of Cabrera, Cullen and Nakata.

Claims 15, 16, 24-27 and 30 depend from claim 14. For at least reasoning

similar to that provided in support of the patentability of claim 14, claims 15, 16, 24-27 and 30 are also patentable over the cited combination of Cabrera, Cullen and Nakata.

For the reasons set forth above, the rejection of claims 14-16, 24-27 and 30 under 35 U.S.C. 103(a) as unpatentable over Cabrera in view of Cullen, and further in view of Nakata, is overcome. Applicants respectfully request that the rejection of claims 14-16, 24-27 and 30 be reconsidered and withdrawn.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cabrera in view of Cullen. Claim 29 depends from independent claim 14. Applicants respectfully traverse this rejection.

As discussed above, neither Cabrera nor Cullen disclose or suggest a gateway appliance that "emulates a file system corresponding to a file system of a network of computer entities," or that "converts data between a file system dependent format and a file system independent format," as recited in claim 14. Thus, Cabrera and Cullen, whether considered alone or in combination, fail to disclose or suggest the elements of claim 14. Therefore, claim 14 is patentable over the cited combination of Cabrera and Cullen.

Claim 29 depends from claim 14. For at least reasoning similar to that provided in support of the patentability of claim 14, claim 29 is also patentable over the cited combination of Cabrera and Cullen. Applicants submit that the rejection of claim 29 is overcome, and respectfully request that the rejection of claim 29 be reconsidered and withdrawn.

Claims 28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cabrera in view of Nakata. Claims 28 and 31 depend from independent claim 14. Applicants respectfully traverse this rejection.

As discussed above, neither Cabrera nor Nakata disclose or suggest a gateway appliance that "emulates a file system corresponding to a file system of a network of

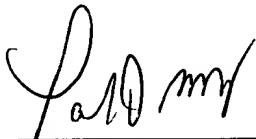
computer entities,” or that “converts data between a file system dependent format and a file system independent format,” as recited in claim 14. Thus, Cabrera and Nakata, whether considered alone or in combination, fail to disclose or suggest the elements of claim 14. Therefore, claim 14 is patentable over the cited combination of Cabrera and Nakata.

Claims 28 and 31 depend from claim 14. For at least reasoning similar to that provided in support of the patentability of claim 14, claims 28 and 31 are also patentable over the cited combination of Cabrera and Nakata. Applicants submit that the rejection of claims 28 and 31 is overcome, and respectfully request that the rejection of claims 28 and 31 be reconsidered and withdrawn.

An indication of the allowability of all pending claims by issuance of a Notice of Allowability is earnestly solicited.

Respectfully submitted,

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